

## REMARKS

The Examiner has indicated that the present application includes claims to the following patentably distinct species of the claimed inventions:

- I. the species of Fig. 3, corresponding to claims 19 to 23 and 27; and
- II. the species of Fig. 4, corresponding to claims 24 to 26.

The Examiner has required Applicants to elect a single species for prosecution on the merits. As via telephone, Applicants provisionally elect species I, i.e., the species of claims 19 to 23, for prosecution on the merits. The Examiner has indicated that claims 14 to 18 are generic.

Thus, claims 14 to 23 and 27 are now pending. And, claims 24 to 26 have been cancelled. Applicants do not necessarily agree with the restriction requirement, and Applicants respectfully reserve the right to file a divisional application on those cancelled claims.

Applicants respectfully request reconsideration of the present application in view of this amendment.

Claim 20 has been objected to for an informality of an equation listed. The Examiner is believed to be correct at this time and claim 20 has been amended in accordance with the instructions of the Examiner. Accordingly, Applicants respectfully request withdrawal of the objection to claim 20.

Claims 14 and 18 to 20 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Specifically, claim 14 has been amended to further clarify the claimed subject matter. Applicants respectfully submit that the Specification and one of ordinary skill in the art would be able to determine and understand "short" intervals, as stated in the claim. Applicants highlight page 5, line 18 et seq. As stated therein, "the time division multiplex method is dynamically adapted to the respective transmitting clock pulse of the useful signal. Synchronization to the useful signal can take place in a learning phase in which a characteristic signal is transmitted at very short intervals..." Applicants respectfully submit that claim 19 and the Specification are clear — "in this context"

among others, "the variable  $\delta$  identifies the time interval between suppression of the useful signal and transmission of the overhead information." Page 9 et seq. Claim 20 has been amended above in accordance with the suggestion of the Examiner – which Applicants believe to be true. Accordingly, Applicants respectfully request that the rejections of claims 14 and 18 to 20 be withdrawn and that claims 14 and 18 to 20 be allowed in the present application.

Claims 14 to 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,151,373 to Widmar et al. (the "Widmar reference") in view of U.S. Patent No. 5,144,466 to Nakamura (the "Nakamura reference").

The Widmar reference purportedly concerns a system for inserting extra-information bits into a bit sequence to be transmitted over a transmission channel and for suppressing such bits from the transmitted bit sequence, the system having an inserter at the transmitting end and a suppressor at the receiving end. Abstract, lines 1-5. The Widmar reference refers to the inserter converting an input bit sequence which it receives at a first repetition frequency into a second repetition frequency which is higher to correspond to the inserted extra bits, by the insertion of  $m$  extra bits per  $m.k.n$  bits of the input bit sequence  $k$ ,  $n$  and  $m$  denoting integers which are greater than zero. Abstract, lines 5-11. The Widmar reference further refers to the suppressor restoring the original input bit sequence at the first repetition frequency and the extra information bits from the output bit sequence which it receives from the transmitter at the second repetition frequency, the inserter comprising a first repetition frequency generator which derives the output bit sequence repetition frequency from the input sequence repetition frequency and complies ...." Abstract, lines 11-19.

Amended claim 14 recites:

A method for transmitting signaling and control information for a wavelength-division multiplex network that performs an optical, fiber-bound information transfer in a digitized form, comprising the steps of:

- using a terminal to process useful information according to one of an optical encoding and an optical decoding;

- performing one of the steps of:

- feeding at a network terminator the useful information into the wavelength-division multiplex network as an optical signal having a defined fundamental wavelength, and removing at the network terminator the optical signal.

wavelength-division multiplex network as the optical signal having the defined fundamental wavelength;  
transmitting collectively a plurality of signals having different wavelengths in an optical fiber;  
performing one of a generation and an analysis of the signaling and control information in one of the network terminator and in a further network element;  
performing one of the steps of:  
feeding the signaling and control information into the wavelength-division multiplex network, and  
removing the signaling and control information from the wavelength-division multiplex network;  
using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information.

The Widmar reference does not teach or suggest at least the features of feeding at a network terminator the useful information into the wavelength-division multiplex network as an optical signal having a defined fundamental wavelength, and removing at the network terminator the useful information from the wavelength-division multiplex network as the optical signal having the defined fundamental wavelength, and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information, as in claim 14. Accordingly, Applicants respectfully submit that the Widmar reference does not teach or suggest all the features of claim 14, and withdrawal of the rejection of claim 14 is respectfully requested.

The Nakamura reference does not cure the deficiencies of the Widmar reference. And, it is respectfully submitted that the Nakamura reference is not combinable with the Widmar reference.

The Nakamura reference purportedly concerns an optical fiber communication system for an optical network in which a plurality of types of communication terminal equipments are connected to one another by optical fibers. See Abstract of Nakamura, U.S. Pat. No. 5,111,111.

order to "overcome the above described problems encountered with conventional systems," the Nakamura reference refers to providing an optical fiber communication method capable of realizing a network which can correspond to multimedia by using optical wavelength multiplexing. Col. 2, lines 62-65. The Nakamura reference refers to using at least three light wavelengths, where one of the three wavelengths is allotted to a packet switched communication of burst signals... another one is allotted to a time division multiplexing line switched communication of continuous signals... and the remainder is allotted to a line switched communication of high speed continuous signals. Col. 4, lines 55-67.

The Nakamura reference does not teach or suggest at least the features of feeding at a network terminator the useful information into the wavelength-division multiplex network as an optical signal having a defined fundamental wavelength, and removing at the network terminator the useful information from the wavelength-division multiplex network as the optical signal having the defined fundamental wavelength, and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information, as in claim 14. Instead, the Nakamura reference appears to be concerned with a different system than that in the Widmar reference and the present application. Accordingly, Applicants respectfully submit that the Widmar reference does not teach or suggest all the features of claim 14, and withdrawal of the rejection of claim 14 is respectfully requested.

Since claims 15 to 18 depend from claim 14, Applicants respectfully submit that those claims are allowable for at least the same reasons as claim 14, thus, the rejections of claims 14 to 18 should be withdrawn.

Claims 19 to 23 were rejected under 35 U.S.C. § 103(a) as unpatentable over the Widmar reference in view of the Nakamura reference and further in view of U.S. Patent No. 5,644,573 to Bingham et al. (the "Bingham reference").

Claims 19 to 23 depend from claim 14, thus, those claims are allowable for at least the same reasons as claim 14 over the Widmar reference and the Nakamura reference.

The Bingham reference purportedly concerns method for coordinating upstream discrete multi-tone data transmissions, that is, methods of coordinating communications between a plurality of remote units and a central unit to facilitate communications using a frame based discrete multi-tone (DMT) transmission scheme are disclosed. Abstract, lines 1-4. The Bingham reference refers to providing synchronized quiet times periodically in the upstream communication stream which can be used to handle a variety of control type functions such as synchronization of new remote units, transmission channel quality checking and handling data transfer requests. Abstract, lines 5-10. The Bingham reference further refers to allocating subchannels for an amount of time sufficient to transmit an amount of information that is specified in the data request information. Abstract, lines 18-21.

The Bingham reference does not cure the deficiencies of the Widmar and Nakamura references. That is, the Bingham reference does not teach or suggest at least the features of feeding at a network terminator the useful information into the wavelength-division multiplex network as an optical signal having a defined fundamental wavelength, and removing at the network terminator the useful information from the wavelength-division multiplex network as the optical signal having the defined fundamental wavelength, and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information, as in claim 14. Accordingly, Applicants respectfully submit that the Bingham reference, alone or in combination with the Widmar and the Nakamura references does not teach or suggest all the features of claim 14, from which claims 19 to 23 depend, and withdrawal of the rejections of claim 19 to 23 is respectfully requested.

Claim 27 was rejected under 35 U.S.C. § 103(a) as unpatentable over the Widmar reference in view of the Nakamura reference, in further view of the Bingham reference and further in view of U.S. Patent No. 4,330,858 to Choquet (the "Choquet reference").

The Choquet reference purportedly concerns a time domain supervisory channel for data terminal equipment which uses a common channel to carry both normal and supervisory messages, the supervisory messages being inserted into the message stream during intervals between normal messages. Abstract, line 1-4. The Choquet reference refers to a setting 1 enabling data to pass from the normal message generator directly to the channel, setting 2 enables data to pass indirectly from the normal message generator through a delay line to the channel, and setting 3 enables data to pass from the supervisory message generator to the channel. Abstract, lines 6-12.

The Choquet reference does not cure the deficiencies of the Widmar, Nakamura and Bingham references. That is, the Choquet reference does not teach or suggest at least the features of feeding at a network terminator the useful information into the wavelength-division multiplex network as an optical signal having a defined fundamental wavelength, and removing at the network terminator the useful information from the wavelength-division multiplex network as the optical signal having the defined fundamental wavelength, and using a time-division multiplex operation to transmit the signaling and control information with the defined fundamental wavelength via the same components of the wavelength-division multiplex network as the corresponding useful information, wherein the signaling and control information is capable of being modulated independently of the useful information, as in claim 14. Accordingly, Applicants respectfully submit that the Choquet reference, alone or in combination with the Widmar, the Nakamura and Bingham references does not teach or suggest all the features of claim 14, from which claim 27 depends, and withdrawal of the rejection of claim 27 is respectfully requested.

Moreover, to reject a claim as obvious under 35 U.S.C. § 103, the prior art must disclose or suggest each claim element and it must also provide a motivation or suggestion for combining the elements in the manner contemplated by the claim. (See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re ...).

It is respectfully submitted that the rejections of claims 14 to 23 and 27 under 35 U.S.C. § 103(a) should be withdrawn.

CONCLUSION

In view of all of the above, it is believed that the rejections of claims 14 to 23 and 27, have been obviated, and that all currently pending claims 14 to 23 and 27 are allowable. It is therefore respectfully requested that any objections and rejections be reconsidered and withdrawn, and that the present application issue as early as possible.

If it would further allowance of the present application, the Examiner is invited to contact the undersigned at the contact information shown below.

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Respectfully submitted,

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